VIII. COMPLIANCE AND ENFORCEMENT HISTORY

VIII.A. Background

Until recently, EPA has focused much of its attention on measuring compliance with specific environmental statutes. This approach allows the Agency to track compliance with the Clean Air Act, the Resource Conservation and Recovery Act, the Clean Water Act, and other environmental statutes. Within the last several years, the Agency has begun to supplement single-media compliance indicators with facility-specific, multimedia indicators of compliance. In doing so, EPA is in a better position to track compliance with all statutes at the facility level, and within specific industrial sectors.

A major step in building the capacity to compile multimedia data for industrial sectors was the creation of EPA's Integrated Data for Enforcement Analysis (IDEA) system. IDEA has the capacity to "read into" the Agency's single-media databases, extract compliance records, and match the records to individual facilities. The IDEA system can match Air, Water, Waste, Toxics/Pesticides/EPCRA, TRI, and Enforcement Docket records for a given facility, and generate a list of historical permit, inspection, and enforcement activity. IDEA also has the capability to analyze data by geographic area and corporate holder. As the capacity to generate multimedia compliance data improves, EPA will make available more in-depth compliance and enforcement information. Additionally, sector-specific measures of success for compliance assistance efforts are under development.

VIII.B. Compliance and Enforcement Profile Description

Using inspection, violation and enforcement data from the IDEA system, this section provides information regarding the historical compliance and enforcement activity of this sector. In order to mirror the facility universe reported in the Toxic Chemical Profile, the data reported within this section consists of records only from the TRI reporting universe. With this decision, the selection criteria are consistent across sectors with certain exceptions. For the sectors that do not normally report to the TRI program, data have been provided from EPA's Facility Indexing System (FINDS) which tracks facilities in all media databases. Please note, in this section, EPA does not attempt to define the actual number of facilities that fall within each sector. Instead, the section portrays the records of a subset of facilities within the sector that are well defined within EPA databases.

As a check on the relative size of the full sector universe, most notebooks contain an estimated number of facilities within the sector according to the Bureau of Census (See Section II). With sectors dominated by small businesses, such as metal finishers and printers, the reporting universe within

the EPA databases may be small in comparison to Census data. However, the group selected for inclusion in this data analysis section should be consistent with this sector's general make-up.

Following this introduction is a list defining each data column presented within this section. These values represent a retrospective summary of inspections and enforcement actions, and reflect solely EPA, State, and local compliance assurance activities that have been entered into EPA databases. To identify any changes in trends, the EPA ran two data queries, one for the past five calendar years (April 1, 1992 to March 31, 1997) and the other for the most recent twelve-month period (April 1, 1996 to March 31, 1997). The five-year analysis gives an average level of activity for that period for comparison to the more recent activity.

Because most inspections focus on single-media requirements, the data queries presented in this section are taken from single media databases. These databases do not provide data on whether inspections are state/local or EPA-led. However, the table breaking down the universe of violations does give the reader a crude measurement of the EPA's and states' efforts within each media program. The presented data illustrate the variations across EPA Regions for certain sectors.[1] This variation may be attributable to state/local data entry variations, specific geographic concentrations, proximity to population centers, sensitive ecosystems, highly toxic chemicals used in production, or historical noncompliance. Hence, the exhibited data do not rank regional performance or necessarily reflect which regions may have the most compliance problems.

Compliance and Enforcement Data Definitions

General Definitions

Facility Indexing System (FINDS) -- this system assigns a common facility number to EPA single-media permit records. The FINDS identification number allows EPA to compile and review all permit, compliance, enforcement and pollutant release data for any given regulated facility.

Integrated Data for Enforcement Analysis (IDEA) -- is a data integration system that can retrieve information from the major EPA program office databases. IDEA uses the FINDS identification number to link separate data records from EPA's databases. This allows retrieval of records from across media or statutes for any given facility, thus creating a f

[1] EPA Regions include the following states: I (CT, MA, ME, RI, NH, VT); II (NJ, NY, PR, VI); III (DC, DE, MD, PA, VA, WV); IV (AL, FL, GA, KY, MS, NC, SC, TN); V (IL, IN, MI, MN, OH, WI); VI (AR, LA, NM, OK, TX); VII (IA, KS, MO, NE); VIII (CO, MT, ND, SD, UT, WY); IX (AZ, CA, HI, NV, Pacific Trust Territories); X (AK, ID, OR, WA).

records for that facility. Some of the data systems accessible through IDEA are: AIRS (Air Facility Indexing and Retrieval System, Office of Air and Radiation), PCS (Permit Compliance System, Office of Water), RCRIS (Resource Conservation and Recovery Information System, Office of Solid Waste), NCDB (National Compliance Data Base, Office of Prevention, Pesticides, and Toxic Substances), CERCLIS (Comprehensive Environmental and Liability Information System, Superfund), and TRIS (Toxic Release Inventory System). IDEA also contains information from outside sources such as Dun and Bradstreet and the Occupational Safety and Health Administration (OSHA). Most data queries displayed in notebook sections IV and VII were conducted using IDEA.

Data Table Column Heading Definitions

Facilities in Search -- are based on the universe of TRI reporters within the listed SIC code range. For industries not covered under TRI reporting requirements (metal mining, nonmetallic mineral mining, electric power generation, ground transportation, water transportation, and dry cleaning), or industries in which only a very small fraction of facilities report to TRI (e.g., printing), the notebook uses the FINDS universe for executing data queries. The SIC code range selected for each search is defined by each notebook's selected SIC code coverage described in Section II.

Facilities Inspected --- indicates the level of EPA and state agency inspections for the facilities in this data search. These values show what percentage of the facility universe is inspected in a one-year or five-year period.

Number of Inspections -- measures the total number of inspections conducted in this sector. An inspection event is counted each time it is entered into a single media database.

Average Time Between Inspections -- provides an average length of time, expressed in months, between compliance inspections at a facility within the defined universe.

Facilities with One or More Enforcement Actions -- expresses the number of facilities that were the subject of at least one enforcement action within the defined time period. This category is broken down further into federal and state actions. Data are obtained for administrative, civil/judicial, and criminal enforcement actions. Administrative actions include Notices of Violation (NOVs). A facility with multiple enforcement actions is only counted once in this column, e.g., a facility with 3 enforcement actions counts as 1 facility.

Total Enforcement Actions -- describes the total number of enforcement actions identified for an industrial sector across all environmental statutes. A facility with multiple enforcement actions is counted multiple times, e.g., a facility with 3 enforcement actions counts as 3.

State Lead Actions -- shows what percentage of the total enforcement actions are taken by state and local environmental agencies. Varying levels of use by states of EPA data systems may limit the volume of actions recorded as state enforcement activity. Some states extensively report enforcement activities into EPA data systems, while other states may use their own data systems.

Federal Lead Actions -- shows what percentage of the total enforcement actions are taken by the United States Environmental Protection Agency. This value includes referrals from state agencies. Many of these actions result from coordinated or joint state/federal efforts.

Enforcement to Inspection Rate -- is a ratio of enforcement actions to inspections, and is presented for comparative purposes only. This ratio is a rough indicator of the relationship between inspections and enforcement. It relates the number of enforcement actions and the number of inspections that occurred within the one-year or five-year period. This ratio includes the inspections and enforcement actions reported under the Clean Water Act (CWA), the Clean Air Act (CAA) and the Resource Conservation and Recovery Act (RCRA). Inspections and actions from the TSCA/FIFRA/ EPCRA database are not factored into this ratio because most of the actions taken under these programs are not the result of facility inspections. Also, this ratio does not account for enforcement actions arising from non-inspection compliance monitoring activities (e.g., self-reported water discharges) that can result in enforcement action within the CAA, CWA, and RCRA.

Facilities with One or More Violations Identified -- indicates the percentage of inspected facilities having a violation identified in one of the following data categories: In Violation or Significant Violation Status (CAA); Reportable Noncompliance, Current Year Noncompliance, Significant Noncompliance (CWA); Noncompliance and Significant Noncompliance (FIFRA, TSCA, and EPCRA); Unresolved Violation and Unresolved High Priority Violation (RCRA). The values presented for this column reflect the extent of noncompliance within the measured time frame, but do not distinguish between the severity of the noncompliance. Violation status may be a precursor to an enforcement action, but does not necessarily indicate that an enforcement action will occur.

Media Breakdown of Enforcement Actions and Inspections -- four columns identify the proportion of total inspections and enforcement actions within EPA Air, Water, Waste, and TSCA/FIFRA/EPCRA databases. Each column is a percentage of either the l Actions" column.

VIII.C. Industry Sector Compliance History

Exhibits 24-31 illustrate recent enforcement activity within the transportation industry. Of the 12,904 inspections conducted at rail, trucking, and oil and gas pipeline facilities over a five year period, 774, or 6 percent, resulted in enforcement actions. Of the three transportation industries addressed by this profile, the pipeline industry has received greater scrutiny from Federal and State inspectors, although certain portions of the trucking industry have also been subject to environmental compliance inspections. While the greatest number of inspections of rail facilities addressed the CWA, the trucking industry had more RCRA inspections while the pipeline industry was subject to the most inspections under the CAA.

Exhibit 24
Five-Year Enforcement and Compliance Summary for Transportation Sectors

	A	B	C	D	E	F	G	H	I	J
	SIC Code	Facilities in Search	Facilities Inspected	Number of Inspections	Average Number of Months Between Inspections	Facilities w/One or More Enforcement Actions	Total Enforcement Actions	State Lead Actions	Federal Lead Actions	Enforcement to Inspection Rate
Rail	4011	434	165	717	36	30	51	74%	26%	0.07
	4013	136	62	328	25	9	13	85%	15%	0.04
Trucking	4212	991	236	987	60	52	147	83%	17%	0.15
	4213	475	205	737	39	34	69	88%	12%	0.09
	4214	195	87	539	22	22	43	81%	19%	0.08
	4215	103	31	60	103	0	0	-	-	-
	4221	219	119	337	39	10	15	73%	27%	0.04
	4222	63	16	52	73	3	6	33%	67%	0.12
	4225	427	151	599	43	25	54	94%	6%	0.09
	4226	479	264	1,828	16	75	182	87%	13%	0.1
	4231	492	180	747	40	28	68	85%	15%	0.09
Oil	4612	377	189	780	29	16	85	82%	18%	0.11
Pipelines	4613	362	193	991	22	16	71	86%	14%	0.07
	4619	45	21	57	47	3	5	100%	0%	0.09
Natural	4922	2,942	1,380	4,566	39	88	122	93%	7%	0.03
Gas	4923	190	84	342	33	2	3	100%	0%	0.01
Pipelines	4924	118	53	210	34	5	7	100%	0%	0.03
	4925	192	112	620	19	12	31	87%	13%	0.05
	4932	30	17	90	20	4	4	100%	0%	0.04
Totals		**7,786**	**3,263**	**12,904**	**36**	**375**	**774**	**84%**	**16%**	**0.06**

Exhibit 25
One-Year Enforcement and Compliance Summary for Transportation Sectors

	A	B	C	D	E		F		G	H
	SIC Code	Facilities in Search	Facilities Inspected	Number of Inspections	Facilities w/One or More Violations		Facilities w/One or More Enforcement Actions		Total Enforcement Actions	Enforcement to Inspection Rate
					Number	Percent*	Number	Percent*		
Rail	4011	434	73	125	49	67%	6	8%	7	0.06
	4013	136	28	60	23	82%	1	4%	1	0.02
Trucking	4212	991	82	167	87	106%	11	13%	16	0.10
	4213	475	70	126	59	84%	10	14%	16	0.13
	4214	195	43	106	46	107%	9	21%	10	0.09
	4215	103	8	8	5	63%	0	0%	0	-
	4221	219	58	71	24	41%	1	2%	1	0.01
	4222	63	4	6	2	50%	0	0%	0	-
	4225	427	58	95	70	121%	2	3%	2	0.02
	4226	479	152	317	85	56%	17	11%	24	0.08
	4231	492	65	137	45	69%	8	12%	10	0.07
Oil Pipelines	4612	377	114	185	20	18%	2	2%	4	0.02
	4613	362	122	186	32	26%	3	2%	5	0.03
	4619	45	10	45	6	60%	0	0%	0	-
Natural Gas Pipelines	4922	2,942	708	963	159	22%	23	3%	23	0.02
	4923	190	41	66	13	32%	1	2%	2	0.03
	4924	118	29	50	9	31%	2	7%	3	0.06
	4925	192	58	107	16	28%	3	5%	9	0.08
	4932	30	8	13	5	63%	1	13%	1	0.08
Totals		**7,786**	**1585**	**2499**	**681**	**27%**	**85**	**3%**	**103**	**0.04**

**Percentages in Columns E and F are based on the number of facilities inspected (Column C). Percentages can exceed 100% because violations and actions can occur without a facility inspection.*

Exhibit 26
Five-Year Enforcement and Compliance Summary by Statute for Transportation Sectors

	SIC Code	Number of Facilities Inspected	Total Inspections	Enforcement Actions	Clean Air Act		Clean Water Act		Resource Conservation and Recovery Act		FIFRA/TSCA/ EPCRA/Other	
					% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions
Rail	4011	165	717	51	18%	6%	52%	56%	30%	30%	0%	8%
	4013	62	328	13	30%	8%	56%	54%	13%	31%	1%	8%
Trucking	4212	236	987	147	14%	33%	14%	4%	71%	59%	1%	3%
	4213	205	737	69	13%	17%	11%	4%	74%	78%	1%	0%
	4214	87	539	43	23%	16%	6%	7%	70%	72%	1%	5%
	4215	31	60	0	5%	0%	0%	0%	95%	0%	0%	0%
	4221	119	337	15	88%	87%	1%	0%	9%	7%	1%	7%
	4222	16	52	6	12%	17%	56%	50%	33%	33%	0%	0%
	4225	151	599	54	31%	9%	16%	6%	52%	83%	2%	2%
	4226	264	1,828	182	46%	53%	15%	14%	38%	32%	1%	1%
	4231	180	747	68	17%	7%	11%	13%	71%	78%	1%	1%
Oil Pipelines	4612	189	780	85	79%	71%	8%	5%	13%	25%	0%	0%
	4613	193	991	71	64%	73%	20%	3%	16%	23%	0%	1%
	4619	21	57	5	54%	20%	23%	20%	21%	60%	2%	0%
Natural Gas Pipelines	4922	1,380	4,566	122	92%	86%	3%	3%	5%	6%	0%	5%
	4923	84	342	3	89%	67%	8%	33%	3%	0%	0%	0%
	4924	53	210	7	80%	71%	13%	29%	8%	0%	0%	0%
	4925	112	620	31	71%	72%	12%	13%	17%	9%	0%	6%
	4932	17	90	4	39%	50%	42%	25%	17%	25%	2%	0%
Totals		**3,263**	**12,904**	**774**	**59%**	**41%**	**12%**	**11%**	**29%**	**45%**	**1%**	**3%**

Actions taken to enforce the Federal Insecticide, Fungicide, and Rodenticide Act; the Toxic Substances and Control Act, and the Emergency Planning and Community Right-to-Know Act as well as other Federal environmental laws.

Exhibit 27
One-Year Enforcement and Compliance Summary for Transportation Sectors

	SIC Code	Number of Facilities Inspected	Total Inspections	Enforcement Actions	Clean Air Act		Clean Water Act		Resource Conservation and Recovery Act		FIFRA/TSCA/ EPCRA/Other	
					% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions
Rail	4011	73	125	7	16%	17%	51%	67%	33%	17%	0%	0%
	4013	28	60	1	30%	0%	50%	100%	20%	0%	0%	0%
Trucking	4212	82	167	16	17%	31%	14%	0%	69%	69%	0%	0%
	4213	70	126	16	12%	19%	10%	0%	78%	81%	0%	0%
	4214	43	106	10	12%	20%	10%	0%	77%	80%	0%	0%
	4215	8	8	0	25%	0%	0%	0%	75%	0%	0%	0%
	4221	58	71	1	82%	0%	0%	0%	18%	100%	0%	0%
	4222	4	6	0	17%	0%	33%	0%	50%	0%	0%	0%
	4225	58	95	2	37%	50%	14%	0%	49%	50%	0%	0%
	4226	152	317	24	48%	42%	12%	17%	39%	38%	0%	4%
	4231	65	137	10	19%	0%	13%	0%	68%	100%	0%	0%
Oil Pipelines	4612	114	185	4	87%	75%	4%	0%	9%	25%	0%	0%
	4613	122	186	5	72%	60%	22%	0%	6%	40%	0%	0%
	4619	10	45	0	50%	0%	8%	0%	42%	0%	0%	0%
Natural Gas Pipelines	4922	708	963	23	94%	96%	3%	0%	4%	4%	0%	0%
	4923	41	66	2	83%	100%	11%	0%	6%	0%	0%	0%
	4924	29	50	3	92%	33%	2%	67%	6%	0%	0%	0%
	4925	58	107	9	79%	100%	8%	0%	12%	0%	0%	0%
	4932	8	13	1	46%	100%	38%	0%	15%	0%	0%	0%
Totals		**1,585**	**2,499**	**103**	**64%**	**46%**	**11%**	**10%**	**26%**	**44%**	**0%**	**1%**

**Actions taken to enforce the Federal Insecticide, Fungicide, and Rodenticide Act; the Toxic Substances and Control Act, and the Emergency Planning and Community Right-to-Know Act as well as other Federal environmental laws.*

VIII.D. Comparison of Enforcement Activity Between Selected Industries

The following exhibits present inspection and enforcement information across numerous manufacturing sector industries including the ground, water, and air transportation industries.

Exhibit 28: Five-Year Enforcement and Compliance Summary for Selected Industries

A	B	C	D	E	F	G	H	I	J
Industry Sector	**Facilities in Search**	**Facilities Inspected**	**Number of Inspections**	**Average Months Between Inspections**	**Facilities with 1 or More Enforcement Actions**	**Total Enforcement Actions**	**Percent State Lead Actions**	**Percent Federal Lead Actions**	**Enforcement to Inspection Rate**
Metal Mining	1,232	378	1,600	46	63	111	53%	47%	0.07
Coal Mining	3,256	741	3,748	52	88	132	89%	11%	0.04
Oil and Gas Extraction	4,676	1,902	6,071	46	149	309	79%	21%	0.05
Non-Metallic Mineral Mining	5,256	2,803	12,826	25	385	622	77%	23%	0.05
Textiles	355	267	1,465	15	53	83	90%	10%	0.06
Lumber and Wood	712	473	2,767	15	134	265	70%	30%	0.10
Furniture	499	386	2,379	13	65	91	81%	19%	0.04
Pulp and Paper	484	430	4,630	6	150	478	80%	20%	0.10
Printing	5,862	2,092	7,691	46	238	428	88%	12%	0.06
Inorganic Chemicals	441	286	3,087	9	89	235	74%	26%	0.08
Resins and Manmade Fibers	329	263	2,430	8	93	219	76%	24%	0.09
Pharmaceuticals	164	129	1,201	8	35	122	80%	20%	0.10
Organic Chemicals	425	355	4,294	6	153	468	65%	35%	0.11
Agricultural Chemicals	263	164	1,293	12	47	102	74%	26%	0.08
Petroleum Refining	156	148	3,081	3	124	763	68%	32%	0.25
Rubber and Plastic	1,818	981	4,383	25	178	276	82%	18%	0.06
Stone, Clay, Glass and Concrete	615	388	3,474	11	97	277	75%	25%	0.08
Iron and Steel	349	275	4,476	5	121	305	71%	29%	0.07
Metal Castings	669	424	2,535	16	113	191	71%	29%	0.08
Nonferrous Metals	203	161	1,640	7	68	174	78%	22%	0.11
Fabricated Metal Products	2,906	1,858	7,914	22	365	600	75%	25%	0.08
Electronics	1,250	863	4,500	17	150	251	80%	20%	0.06
Automobile Assembly	1,260	927	5,912	13	253	413	82%	18%	0.07
Shipbuilding and Repair	44	37	243	9	20	32	84%	16%	0.13
Ground Transportation	**7,786**	**3,263**	**12,904**	**36**	**375**	**774**	**84%**	**16%**	**0.06**
Water Transportation	514	192	816	38	36	70	61%	39%	0.09
Air Transportation	444	231	973	27	48	97	88%	12%	0.10
Fossil Fuel Electric Power	3,270	2,166	14,210	14	403	789	76%	24%	0.06

Exhibit 29: One-Year Enforcement and Compliance Summary for Selected Industries

A	B	C	D	E		F		G	H
				Facilities with 1 or More Violations		Facilities with 1 or more Enforcement Actions			
Industry Sector	Facilities in Search	Facilities Inspected	Number of Inspections	Number	Percent*	Number	Percent*	Total Enforcement Actions	Enforcement to Inspection Rate
Metal Mining	1,232	142	211	102	72%	9	6%	10	0.05
Coal Mining	3,256	362	765	90	25%	20	6%	22	0.03
Oil and Gas Extraction	4,676	874	1,173	127	15%	26	3%	34	0.03
Non-Metallic Mineral Mining	5,256	1,481	2,451	384	26%	73	5%	91	0.04
Textiles	355	172	295	96	56%	10	6%	12	0.04
Lumber and Wood	712	279	507	192	69%	44	16%	52	0.10
Furniture	499	254	459	136	54%	9	4%	11	0.02
Pulp and Paper	484	317	788	248	78%	43	14%	74	0.09
Printing	5,862	892	1,363	577	65%	28	3%	53	0.04
Inorganic Chemicals	441	200	548	155	78%	19	10%	31	0.06
Resins and Manmade Fibers	329	173	419	152	88%	26	15%	36	0.09
Pharmaceuticals	164	80	209	84	105%	8	10%	14	0.07
Organic Chemicals	425	259	837	243	94%	42	16%	56	0.07
Agricultural Chemicals	263	105	206	102	97%	5	5%	11	0.05
Petroleum Refining	156	132	565	129	98%	58	44%	132	0.23
Rubber and Plastic	1,818	466	791	389	83%	33	7%	41	0.05
Stone, Clay, Glass and Concrete	615	255	678	151	59%	19	7%	27	0.04
Iron and Steel	349	197	866	174	88%	22	11%	34	0.04
Metal Castings	669	234	433	240	103%	24	10%	26	0.06
Nonferrous Metals	203	108	310	98	91%	17	16%	28	0.09
Fabricated Metal	2,906	849	1,377	796	94%	63	7%	83	0.06
Electronics	1,250	420	780	402	96%	27	6%	43	0.06
Automobile Assembly	1,260	507	1,058	431	85%	35	7%	47	0.04
Shipbuilding and Repair	44	22	51	19	86%	3	14%	4	0.08
Ground Transportation	**7,786**	**1,585**	**2,499**	**681**	**43%**	**85**	**5%**	**103**	**0.04**
Water Transportation	514	84	141	53	63%	10	12%	11	0.08
Air Transportation	444	96	151	69	72%	8	8%	12	0.08
Fossil Fuel Electric Power	3,270	1,318	2,430	804	61%	100	8%	135	0.06
Dry Cleaning	6,063	1,234	1,436	314	25%	12	1%	16	0.01

**Percentages in Columns E and F are based on the number of facilities inspected (Column C). Percentages can exceed 100% because violations and actions can occur without a facility inspection.*

Exhibit 30: Five-Year Inspection and Enforcement Summary by Statute for Selected Industries

Industry Sector	Facilities Inspected	Total Inspections	Total Enforcement Actions	Clean Air Act		Clean Water Act		RCRA		FIFRA/TSCA/ EPCRA/Other	
				% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions
Metal Mining	378	1,600	111	39%	19%	52%	52%	8%	12%	1%	17%
Coal Mining	741	3,748	132	57%	64%	38%	28%	4%	8%	1%	1%
Oil and Gas Extraction	1,902	6,071	309	75%	65%	16%	14%	8%	18%	0%	3%
Non-Metallic Mineral Mining	2,803	12,826	622	83%	81%	14%	13%	3%	4%	0%	3%
Textiles	267	1,465	83	58%	54%	22%	25%	18%	14%	2%	6%
Lumber and Wood	473	2,767	265	49%	47%	6%	6%	44%	31%	1%	16%
Furniture	386	2,379	91	62%	42%	3%	0%	34%	43%	1%	14%
Pulp and Paper	430	4,630	478	51%	59%	32%	28%	15%	10%	2%	4%
Printing	2,092	7,691	428	60%	64%	5%	3%	35%	29%	1%	4%
Inorganic Chemicals	286	3,087	235	38%	44%	27%	21%	34%	30%	1%	5%
Resins and Manmade Fibers	263	2,430	219	35%	43%	23%	28%	38%	23%	4%	6%
Pharmaceuticals	129	1,201	122	35%	49%	15%	25%	45%	20%	5%	5%
Organic Chemicals	355	4,294	468	37%	42%	16%	25%	44%	28%	4%	6%
Agricultural Chemicals	164	1,293	102	43%	39%	24%	20%	28%	30%	5%	11%
Petroleum Refining	148	3,081	763	42%	59%	20%	13%	36%	21%	2%	7%
Rubber and Plastic	981	4,383	276	51%	44%	12%	11%	35%	34%	2%	11%
Stone, Clay, Glass and Concrete	388	3,474	277	56%	57%	13%	9%	31%	30%	1%	4%
Iron and Steel	275	4,476	305	45%	35%	26%	26%	28%	31%	1%	8%
Metal Castings	424	2,535	191	55%	44%	11%	10%	32%	31%	2%	14%
Nonferrous Metals	161	1,640	174	48%	43%	18%	17%	33%	31%	1%	10%
Fabricated Metal	1,858	7,914	600	40%	33%	12%	11%	45%	43%	2%	13%
Electronics	863	4,500	251	38%	32%	13%	11%	47%	50%	2%	7%
Automobile Assembly	927	5,912	413	47%	39%	8%	9%	43%	43%	2%	9%
Shipbuilding and Repair	37	243	32	39%	25%	14%	25%	42%	47%	5%	3%
Ground Transportation	**3,263**	**12,904**	**774**	**59%**	**41%**	**12%**	**11%**	**29%**	**45%**	**1%**	**3%**
Water Transportation	192	816	70	39%	29%	23%	34%	37%	33%	1%	4%
Air Transportation	231	973	97	25%	32%	27%	20%	48%	48%	0%	0%
Fossil Fuel Electric Power	2,166	14,210	789	57%	59%	32%	26%	11%	10%	1%	5%

Exhibit 31: One-Year Inspection and Enforcement Summary by Statute for Selected Industries

Industry Sector	Facilities Inspected	Total Inspections	Total Enforcement Actions	Clean Air Act		Clean Water Act		RCRA		FIFRA/TSCA/ EPCRA/Other	
				% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions
Metal Mining	142	211	10	52%	0%	40%	40%	8%	30%	0%	30%
Coal Mining	362	765	22	56%	82%	40%	14%	4%	5%	0%	0%
Oil and Gas Extraction	874	1,173	34	82%	68%	10%	9%	9%	24%	0%	0%
Non-Metallic Mineral Mining	1,481	2,451	91	87%	89%	10%	9%	3%	2%	0%	0%
Textiles	172	295	12	66%	75%	17%	17%	17%	8%	0%	0%
Lumber and Wood	279	507	52	51%	30%	6%	5%	44%	25%	0%	40%
Furniture	254	459	11	66%	45%	2%	0%	32%	45%	0%	9%
Pulp and Paper	317	788	74	54%	73%	32%	19%	14%	7%	0%	1%
Printing	892	1,363	53	63%	77%	4%	0%	33%	23%	0%	0%
Inorganic Chemicals	200	548	31	35%	59%	26%	9%	39%	25%	0%	6%
Resins and Manmade Fibers	173	419	36	38%	51%	24%	38%	38%	5%	0%	5%
Pharmaceuticals	80	209	14	43%	71%	11%	14%	45%	14%	0%	0%
Organic Chemicals	259	837	56	40%	54%	13%	13%	47%	34%	0%	0%
Agricultural Chemicals	105	206	11	48%	55%	22%	0%	30%	36%	0%	9%
Petroleum Refining	132	565	132	49%	67%	17%	8%	34%	15%	0%	10%
Rubber and Plastic	466	791	41	55%	64%	10%	13%	35%	23%	0%	0%
Stone, Clay, Glass and Concrete	255	678	27	62%	63%	10%	7%	28%	30%	0%	0%
Iron and Steel	197	866	34	52%	47%	23%	29%	26%	24%	0%	0%
Metal Castings	234	433	26	60%	58%	10%	8%	30%	35%	0%	0%
Nonferrous Metals	108	310	28	44%	43%	15%	20%	41%	30%	0%	7%
Fabricated Metal	849	1,377	83	46%	41%	11%	2%	43%	57%	0%	0%
Electronics	420	780	43	44%	37%	14%	5%	43%	53%	0%	5%
Automobile Assembly	507	1,058	47	53%	47%	7%	6%	41%	47%	0%	0%
Shipbuilding and Repair	22	51	4	54%	0%	11%	50%	35%	50%	0%	0%
Ground Transportation	**1,585**	**2,499**	**103**	**64%**	**46%**	**11%**	**10%**	**26%**	**44%**	**0%**	**1%**
Water Transportation	84	141	11	38%	9%	24%	36%	38%	45%	0%	9%
Air Transportation	96	151	12	28%	33%	15%	42%	57%	25%	0%	0%
Fossil Fuel Electric Power	1,318	2,430	135	59%	73%	32%	21%	9%	5%	0%	0%
Dry Cleaning	1,234	1,436	16	69%	56%	1%	6%	30%	38%	0%	0%

IX. REVIEW OF MAJOR LEGAL ACTIONS

This section provides summary information about major cases that have affected this sector. As indicated in EPA's Enforcement Accomplishments Reports from 1992-1994, several significant enforcement actions were resolved between 1992-1994 involving the rail, trucking, and pipeline industries. Characterizations of the types of enforcement actions taken are provided for each of the cited cases.

IX.A. Review of Major Cases

IX.A.1. Rail

U.S. v. Consolidated Rail Corporation, CAA, 1992

U.S. District Court entered a second amendment to consent order resolving EPA's CAA contempt action against Consolidated Rail Corporation (Conrail). The amendment requires Conrail to pay $165,000 in penalties for past violations. In addition, it allows the company to apply encrusting agents in lieu of water to control fugitive dust. The amendment is based on a consent order EPA and Conrail negotiated in 1986 to resolve violations of Ohio's State Implementation Plan (SIP).

U.S. v. CSX Transportation, CWA, 1993

CSX Transportation signed a consent decree to pay $3,00,000 in civil penalties and perform four Supplemental Environmental Projects (SEPs) valued at $4,000,000 for alleged violations of CWA for exceeding NPDES limits.

Burlington Northern, Multi-media, 1994

EPA Region V sought $279,078 to recover costs incurred consistent with the NCP under CERCLA and OPA, natural resource damages totaling $250,000, and CWA penalties totaling $2,500,000 for three incidents of railroad derailment.

In the matter of Burlington Northern Railroad, EPCRA, 1994

A RCRA consent order was issued for the contamination of groundwater, and a 1993 unilateral administrative order, based on a multimedia inspection, required the defendant to cease discharge of oil and chlorinated waters.

Southern Pacific Transportation Corporation, 1994

A train derailment caused the release of a herbicide into the Sacramento River killing all plant life for 42 miles. The settlement provided for recovery of $36 million in response costs. The decree also required payment of a $500,000 civil penalty (the statutory maximum for the violation). Defendants must also establish a $14 million fund for natural resource damages.

U.S. v. Norfolk & Western Railway Company, 1994

Criminal plea agreement and settlement resulted in the U.S. receiving $500,000 fine and $500,000 restitution. Missouri received $700,000 fine and $1.7 million in restitution, $1 million for creation of a park, and establishment of a $2.2 million environmental awareness program.

IX.A.2. Trucking

U.S. v. The Carborundum Company, et al. , CERCLA, 1994

On March 30, 1994, a consent decree was lodged in the District Court of New Jersey which partially settles Region II's cost recovery claims relating to the Caldwell Trucking Company Superfund site in Fairchild Township, New Jersey. From 1950 through the mid 1970s, Caldwell Trucking hauled septage and other wastes from residential, commercial, and industrial customers and disposed of these wastes in unlined lagoons at the site. The nine settling defendants agreed to pay $2.46 million for EPA's past and future costs and agreed to perform all scheduled remedial and natural resource restoration work at the site, valued at an additional $32 million. New Jersey will also receive its first natural resource damage payment under CERCLA, in the amount of $984,000, and the U.S. Department of the Interior will receive $40,000 for its assessment and monitoring costs.

U.S. v. Gomer's Diesel and Electric Company, RCRA, 1994

Gomer's Diesel and Electric Co., with automotive and truck maintenance facilities located in Belgrade, Great Falls, and Missoula, Montana, was sentenced on March 24, 1994, following a plea of guilty to one-count of unlawful transportation of a hazardous waste in violation of RCRA. The company was placed on supervised probation for two years and fined $100,000, $50,000 of which was suspended in recognition of remediation conducted at its Belgrade facility.

Hamner, Inc., Corpus Christi, CWA, 1994

An administrative Class I complaint was issued against Hamner, Inc. Corpus Christi, Texas, on May 24, 1994, with a proposed penalty of $9,108 for

violations of the CWA. The corporation's tanker truck overturned, discharging approximately 24 barrels of petroleum naphtha. The petroleum naphtha entered navigable waters of the U.S. in quantities determined to be harmful. The oil did not enter a major waterway, no drinking water supply was affected, and there were no signs of damage to wildlife or aquatic life. Settlement negotiations are underway.

IX.A.3. Pipelines

U.S. v. Shell Oil Pipeline Corporation, Criminal Enforcement, 1992

Pipeline rupture caused an 860,000 gallon oil spill into the Mississippi, Gasconade, and Missouri rivers. Shell pleaded guilty to violation of the Refuse Act and agreed to pay $8,400,000 in fines, restitution, and settlements.

U.S. v. Texaco, CERCLA, 1993

Texaco entered a consent decree for performance of a remedial design and remedial action at the Pacific Cost Pipeline Superfund site in California. The RA is valued at $4,000,000. Texaco also agreed to reimburse California for response costs, the U.S. for future response costs, and EPA for past RI/FS costs.

U.S. v. Transwestern Pipeline Company, TSCA, 1993

A consent decree was terminated when the defendant met all terms and conditions of settlement (including payment of a penalty of $375,000 and groundwater monitoring). Under the decree, 144,991 tons of PCB contaminated soil and debris were removed and disposed in TSCA landfill.

U.S. v. Tennessee Gas Pipeline Co., CWA, 1993

Court entered final order for dismissal after parties agreed to a penalty of $725,000 for unauthorized discharges of PCBs from a pumping station.

U.S. v. U.S. Oil and U.S. v. Texaco, OPA, 1993

U.S. Oil agreed to pay civil penalties of $425,000 and Texaco agreed to pay $480,000 in penalties. Both were made to acquire and install state-of-the-art spill detection and prevention equipment valued at $800,000 for each company. Both were also required to reimburse for Federal spill response costs of $60,000 and $125,000 respectively. The actions represent the first judicial penalties assessed under OPA.

IX.B. Supplemental Environmental Projects (SEPs)

Below is a list of Supplementary Environmental Projects (SEPs). SEPs are compliance agreements that reduce a facility's stipulated penalty in return for an environmental project that exceeds the value of the reduction. Often, these projects fund pollution prevention activities that can significantly reduce the future pollutant loadings of a facility.

Exhibit 32 contains a sample of SEPs from the transportation industry. The information contained in the chart is not comprehensive and provides only a sample of the types of SEPs developed for the transportation industry.

Exhibit 32
Supplemental Environmental Projects in the Transportation Industry

Case Name	Statute	Estimated Cost to Company	Environmentally Beneficial Activities
General Chemical Company	CAA	$90,000,	Facility was to purchase and install an Airless Paint Spray Unit and Fanu Robotics Spray Unit in order to reduce total VOC releases to the atmosphere by 10 percent.
Thatcher Chemical Company	EPCRA §304	Not Known	SEP included the construction of a building with scrubbing equipment for enclosing loading products to prevent future releases into the environment to be completed by January 24, 1994.
CSX Transportation	CAA	$ 4,000,000	Company was required to: • Perform NPDES compliance audits at 21 active CSX railroad yards • Conduct multi-media risk assessment audit at 61 inactive facilities • Provide environmental awareness training program for managers • Develop best management practices manual and a seminar on storm water runoff at railroad yards.

X. COMPLIANCE ACTIVITIES AND INITIATIVES

This section highlights the activities undertaken by this industry sector and public agencies to voluntarily improve the sector's environmental performance. These activities include those independently initiated by industrial trade associations. This section of the notebook also contains a listing and description of national and regional trade associations.

X.A. Sector-Related Environmental Programs and Activities

Environmental compliance assurance activities have been conducted by the major trade associations for each of the transportation sectors covered in this report. The following examples represent some of the industry initiatives that promote compliance, or assess methods to reduce environmental contamination.

X.A.1. Rail

Waste Minimization Assessment for a Manufacturer of Rebuilt Railway Cars and Components

U.S. EPA funded a pilot project to assist small- and medium-size manufacturers wishing to minimize their generation of hazardous waste, but lacking the expertise to do so. The Agency established Waste Minimization Assessment Centers (WMACs) at selected universities, adapting procedures from EPA's *Waste Minimization Opportunity Assessment Manual*. The WMAC team at the University of Tennessee inspected a plant that rebuilds approximately 2,000 railway cars each year and that refurbishes wheel assemblies and air brake systems. The team issued a report and made a number of recommendations for minimizing hazardous waste outputs.

X.A.2. Trucking

Consolidated Compliance Reviews

The trucking industry has worked with the Department of Transportation, Federal Highway Administration (FHWA), to develop streamlined processes for conducting compliance reviews. As a result, the FHWA now conducts all record reviews and inspection activities in a "one stop" process.

The original process involved several different inspections. The first type of inspection focused on compliance with ICC rules and operating authority licenses. The second type of inspection focused on safety compliance issues. Additional inspections were conducted to ensure compliance with hazardous materials transportation regulations were added in the 1980's. More recently, driver drug testing was added to the inspection requirements.

DOT-FHWA's compliance review is now conducted with the inspector using a lap-top computer with built in prompters, programs to generate checklists, work sheets, tabulations, and regulations and interpretations. These tools allow the inspector to cover all the components of the inspection in "one stop." The compliance review often occurs at corporate headquarters. The system was developed in 1986; currently, about 200 DOT-FHWA inspectors use the system.

Inspectors receive six weeks of training when they come into the DOT-FHWA, including training on case development, regulations, compliance reviews, and sensitivity. Inspectors do not need permission before entering a facility but usually call in advance so the appropriate staff and records can be available. Unannounced inspections may occur if criminal activity is suspected.

DOT-FHWA inspectors are providing more and more technical assistance to the regulated community. They have education packages on specific issues, such as hazardous materials, and "On Guard" announcements of new safety problems or rules affecting the industry.

Cooperative Hazardous Materials Enforcement Development

The Cooperative Hazardous Materials Enforcement Development (COHMED) program is an outreach activity of the U.S. DOT's Research and Special Programs Administration (RSPA). COHMED works to promote coordination, cooperation, education, and communication for Federal, State, local agencies, and industry having enforcement, response, and management responsibilities for the safe transportation of hazardous materials. Through education and training, COHMED participants are able to improve current programs, and develop new programs to enhance hazardous materials safety.

COHMED conducts semi-annual conferences and hazardous materials seminars. COHMED also publishes a quarterly newsletter, "The Reporter," and the "Bullet" when expedient dissemination of information is required. COHMED participation is open to Federal, State, local agencies, and industry involved in enforcement, emergency response or planning and preparedness. For more information call (202) 366-4900.

CHEMTREC

CHEMTREC is a public service organization established by the Chemical Manufacture's Association and its members in 1971 to provide first responders, the transportation industry, medical professionals, and others access to response information and technical assistance from chemical industry experts for incidents involving hazardous materials. The Center is

staffed by trained communicators who can contact thousands of chemical manufacturers, shippers, distributors, and carriers. Through these contacts, CHEMTREC can teleconference responders at the scene of an incident with technical experts to provide immediate advice and assistance. CHEMTREC can also immediately provide and transmit, via fax, product Material Safety Data Sheets or other specific product information. The CHEMTREC Center can be reached 24 hours a day, 7 days a week at 1-800-424-9300.

TRANSCAER

TRANSCAER is an outreach program that focuses on assisting communities that do not host a major chemical facility but have major transportation routes within their jurisdiction. TRANSCAER is sponsored by the chemical manufacturing, distribution and transportation industries. TRANSCAER's objectives are to ensure that communities are prepared to handle hazardous materials transportation emergencies and that an ongoing dialogue exists with the public about chemical transportation. The program provides assistance for communities to develop and evaluate their emergency response plan for hazardous material transportation incidents. For more information contact the TRANSCAER Task Group at c/o CMA, 1300 Wilson Blvd., Arlington, VA, 22209.

CMA's Lending Library

Since 1985, the CMA's Lending Library has provided free access to videotape training programs on hazardous materials and handling hazardous materials incidents. Contact the CMA Publication Fulfillment department at (202) 887-1253 for ordering information.

X.A.3. Pipelines

The giant Alaska company Alyeska has undertaken the most expensive corrosion repair program in the industry's history with a campaign to inspect pipelines for corrosion, repair damaged sections, and replace pipe sections as needed. The estimated costs of this effort from 1991-1996 are $600-800 million. External and internal corrosion at some of the 800-mile line's pump stations was discovered with the help of a corrosion detection pig that exceeded Federal standards for corrosion detection and mitigation (U.S. Petroleum Strategies, Bob Williams, 1991).

X.B. EPA Voluntary Programs

Environmental Leadership Program

The Environmental Leadership Program (ELP) is a national initiative developed by EPA that focuses on improving environmental performance, encouraging voluntary compliance, and building working relationships with stakeholders. EPA initiated a one year pilot program in 1995 by selecting 12 projects at industrial facilities and federal installations that demonstrate the principles of the ELP program. These principles include: environmental management systems, multimedia compliance assurance, third-party verification of compliance, public measures of accountability, pollution prevention, community involvement, and mentor programs. In return for participating, pilot participants received public recognition and were given a period of time to correct any violations discovered during these experimental projects.

EPA is making plans to launch its full-scale Environmental Leadership Program in 1997. The full-scale program will be facility-based with a 6-year participation cycle. Facilities that meet certain requirements will be eligible to participate, such as having a community outreach/employee involvement programs and an environmental management system (EMS) in place for 2 years. (Contact: http://es.inel.gov/elp or Debby Thomas, ELP Deputy Director, at 202-564-5041)

Project XL

Project XL was initiated in March 1995 as a part of President Clinton's *Reinventing Environmental Regulation* initiative. The projects seek to achieve cost effective environmental benefits by providing participants regulatory flexibility on the condition that they produce greater environmental benefits. EPA and program participants will negotiate and sign a Final Project Agreement, detailing specific environmental objectives that the regulated entity shall satisfy. EPA will provide regulatory flexibility as an incentive for the participants' superior environmental performance. Participants are encouraged to seek stakeholder support from local governments, businesses, and environmental groups. EPA hopes to implement fifty pilot projects in four categories, including industrial facilities, communities, and government facilities regulated by EPA. Applications will be accepted on a rolling basis. For additional information regarding XL projects, including application procedures and criteria, see the May 23, 1995 Federal Register Notice. (Contact: Fax-on-Demand Hotline 202-260-8590, Web: http://www.epa.gov/ProjectXL, or Christopher Knopes at EPA's Office of Policy, Planning and Evaluation 202-260-9298)

Climate Wise Program

EPA's ENERGY STAR Buildings Program is a voluntary, profit-based program designed to improve the energy-efficiency in commercial and industrial buildings. Expanding the successful Green Lights Program, ENERGY STAR Buildings was launched in 1995. This program relies on a 5-stage strategy designed to maximize energy savings thereby lowering energy bills, improving occupant comfort, and preventing pollution -- all at the same time. If implemented in every commercial and industrial building in the United States, ENERGY STAR Buildings could cut the nation's energy bill by up to $25 billion and prevent up to 35% of carbon dioxide emissions. (This is equivalent to taking 60 million cars of the road). ENERGY STAR Buildings participants include corporations; small and medium sized businesses; local, federal and state governments; non-profit groups; schools; universities; and health care facilities. EPA provides technical and non-technical support including software, workshops, manuals, communication tools, and an information hotline. EPA's Office of Air and Radiation manages the operation of the ENERGY STAR Buildings Program. (Contact: Green Light/Energy Star Hotline at 1-888-STAR-YES or Maria Tikoff Vargas, EPA Program Director at 202-233-9178 or visit the ENERGY STAR Buildings Program website at http://www.epa.gov/appdstar/buildings/)

Green Lights Program

EPA's Green Lights program was initiated in 1991 and has the goal of preventing pollution by encouraging U.S. institutions to use energy-efficient lighting technologies. The program saves money for businesses and organizations and creates a cleaner environment by reducing pollutants released into the atmosphere. The program has over 2,345 participants which include major corporations, small and medium sized businesses, federal, state and local governments, non-profit groups, schools, universities, and health care facilities. Each participant is required to survey their facilities and upgrade lighting wherever it is profitable. As of March 1997, participants had lowered their electric bills by $289 million annually. EPA provides technical assistance to the participants through a decision support software package, workshops and manuals, and an information hotline. EPA's Office of Air and Radiation is responsible for operating the Green Lights Program. (Contact: Green Light/Energy Star Hotline at 1-888-STARYES or Maria Tikoff Vargar, EPA Program Director, at 202-233-9178 the)

WasteWi$e Program

The WasteWi$e Program was started in 1994 by EPA's Office of Solid Waste and Emergency Response. The program is aimed at reducing municipal solid wastes by promoting waste prevention, recycling collection and the manufacturing and purchase of recycled products. As of 1997, the

program had about 500 companies as members, one third of whom are Fortune 1000 corporations. Members agree to identify and implement actions to reduce their solid wastes setting waste reduction goals and providing EPA with yearly progress reports. To member companies, EPA, in turn, provides technical assistance, publications, networking opportunities, and national and regional recognition. (Contact: WasteWi$e Hotline at 1-800-372-9473 or Joanne Oxley, EPA Program Manager, 703-308-0199)

NICE^3

The U.S. Department of Energy is administering a grant program called The National Industrial Competitiveness through Energy, Environment, and Economics (NICE^3). By providing grants of up to 45 percent of the total project cost, the program encourages industry to reduce industrial waste at its source and become more energy-efficient and cost-competitive through waste minimization efforts. Grants are used by industry to design, test, and demonstrate new processes and/or equipment with the potential to reduce pollution and increase energy efficiency. The program is open to all industries; however, priority is given to proposals from participants in the forest products, chemicals, petroleum refining, steel, aluminum, metal casting and glass manufacturing sectors. (Contact: http//www.oit.doe.gov/access/nice3, Chris Sifri, DOE, 303-275-4723 or Eric Hass, DOE, 303-275-4728)

Design for the Environment (DfE)

DfE is working with several industries to identify cost-effective pollution prevention strategies that reduce risks to workers and the environment. DfE helps businesses compare and evaluate the performance, cost, pollution prevention benefits, and human health and environmental risks associated with existing and alternative technologies. The goal of these projects is to encourage businesses to consider and use cleaner products, processes, and technologies. For more information about the DfE Program, call (202) 260-1678. To obtain copies of DfE materials or for general information about DfE, contact EPA's Pollution Prevention Information Clearinghouse at (202) 260-1023 or visit the DfE Website at http://es.inel.gov/dfe.

X.C. Trade Association/Industry-Sponsored Activity

The trade associations that represent the transportation industry are a valuable source of economic and environmental compliance data. The following subsections list major transportation trade organizations and highlight environmental initiatives sponsored by some of these groups.

X.C.1. Railroad Tank Car Safety Research and Test Project

Since 1970 the Railway Progress Institute (RPI) and Association of American Railroads (AAR) have cosponsored the RPI-AAR Railroad Tank Car Safety Research and Test Project. The purpose of the project, initiated following several fatal tank car crashes in the late 1960s, is to identify and understand the causes of tank car punctures and ruptures in accidents and to develop engineering solutions. Results of this continuing project have led to the development and introduction of several devices to improve tank car crash worthiness, including double-shelf couplers and head and thermal protection systems. In addition, the program has produced a database of more than 35,000 records of tank cars damaged over the past 30 years (*Ensuring Railroad Tank Car Safety*, Transportation Research Board, National Research Council, 1994).

The research conducted on tank car safety has resulted in the implementation of regulation to increase the safety of certain hazardous material cars. DOT HM-175 which was finalized in September 1995, covers a wide range of tank car safety related issues, including new tank car specifications for halogenated organic compounds. This effort has resulted in significantly safer tank cars for these materials.

In addition, there have been several improvements in an industry agreement between the AAR, the Chemical Manufacturers Association (CMA), and RPI, including:

- Thicker tank cars made of stronger steel;
- Elimination of bottom outlets, a common source of releases in accidents; and
- A full height head shield to protect the end of the tank from punctures in accidents.

X.C.2. The North American Non-Accident Release Reduction Program

The North American Non-Accident Release Reduction Program was initiated in June 1995 by the rail industry. A "Non-Accident Release" (NAR) is any unintended release of a hazardous commodity from a railroad car not caused

by a train accident. Most NAR's involve small quantity releases, but some have been very costly and all have the potential for serious injury. The North American NAP Program is an awareness campaign designed to alert shippers and carriers to repeated instances of NARs of hazardous commodities from rail tank cars and encourage positive action to prevent recurrence.

General oversight of the NAR Program rests with AAR's Hazardous Materials Working Committee and the NAR General Committee, made up of representatives from shippers, carriers, car owners, and industry associations. The NAR Program has two sub-committees, a Technical Subcommittee and a Communications/Regulatory Subcommittee. The Technical group reviews NAR data and attempts to develop technical solutions to identified problems. The Communications/Regulatory group works on program publicity and government (regulatory) relations.

NAR data is collected by carriers and reported to AAR, who enters it into an NAR database, keeping all business data confidential. When a threshold number of releases has been recorded for any given company, AAR prepares an "action package" outlining the details of each release and forwards the information to a designated individual at that company. Recipients of action packages are encouraged to take whatever actions are appropriate to address the causes of the releases, advising AAR of their response. The NAR General Committee has set a goal to reduce the number of NARs from hazardous materials tank cars in North America by 25 percent over a two year period. The North American NAR Program is an expansion of a successful program started in Canada in 1992. NAR's in Canada were reduced 32% over a two year period after implementation of the program.

X.C.3. Environmental Compliance Handbook for Short Line Railroads

As part of its mandate to clarify and communicate environmental regulatory responsibilities to the freight and rail industry, EPA’s Freight, Economy, and the Environmental Work Group has worked with the Federal Railroad Administration (FRA) to prepare a handbook on EPA regulations applicable to short line railroads. The handbook is a "plain English" guide to short line railroad environmental responsibilities and the laws that created them. The handbook also provides State and Federal agency contacts and Hotlines.

X.C.4. Environmental Training Publications and Videotapes

The American Trucking Associations (ATA) has developed numerous documents and videotapes to help those in the trucking industry to better understand applicable environmental regulations and to assist them in compliance. Following is a list of some the materials offered by the ATA. For a more complete catalogue listing these and other products, contact the ATA document center at (800) ATA-LINE.

- *Stormwater Best Management Practices: Guidance for Vehicle Maintenance Facilities (video)* - Identifies practical and effective best management practices that can be used in vehicle washing, fueling, and loading areas.

- *Used Oil: A Guidebook to Best Management Practices* - Helps the user determine the company's responsibilities and develop procedures that are productive, cost-efficient, and in compliance with Federal and State guidelines.

- *Hazardous Waste Regulations for the Trucking Industry* - Outlines and explains hazardous waste regulations as they relate to the trucking industry.

- *Stormwater: Pollution Prevention for the Trucking Industry* - Explains how to write a pollution prevention plan and covers the five general phases of a plan in detail.

- *Vehicle Washing Compliance Manual* - Provides a State-by-State review of applicable regulations affecting vehicle washing and a survey of vehicle washing technology.

X.C.5. Pipeline Integrity Programs - Natural Gas and Hazardous Liquid One-Call Systems

More than 60 percent of pipeline accidents are the result of third-party damage. One-call systems were developed to reduce the number of incidents involving accidental pipeline ruptures.

Contractors and homeowners who work in the vicinity of natural gas and hazardous liquid lines can learn of their location via a single telephone number. This number is supplied in 48 of the 50 States and in Canada by various one-call systems, and is usually posted on pipeline markers along the pipe route.

Each one-call system is an organization funded by member underground utilities. The system acts as a computerized link between people digging around pipelines and the operators of these conveyance systems. When a contractor or homeowner calls the toll-free number, the one-call operator takes information regarding the time and location of planned work and immediately notifies all members with underground facilities in the excavation area.

When a member receives notification of planned excavation in its area, its operators are responsible for determining the potential hazards to the line. If

the work does have the potential to affect the pipeline, the company will dispatch crews within 24 to 72 business hours to locate and mark the pipeline's route. After determining the direction and width of the pipe, personnel use a series of flags or spray paint to mark the exact location of the system. If the work will cross the pipeline, crews also test for exact pipeline depth.

X.C.6. Summary of Trade Associations

The trade and professional organizations serving the transportation industry are presented below, classified by industry sector.

Rail

Association of American Railroads 50 F Street, NW Washington, D.C. 20001 Phone: (202) 639-2839 Fax: (202) 639-2465	Members: 64 Staff: 607 Budget: $48,800,000

The Association of American Railroads (AAR) is the coordinating and research agency of the American railway industry. Membership is comprised of the larger, Class I, railroads. Focus areas include: railroad operation and maintenance, statistics, medical problems, cooperative advertising and public relations, rates, communication, safety, and testing of railroad equipment. The AAR was founded in 1934 and maintains a library of current and historical volumes and periodicals. The AAR also operates an on-line database of all railcars, trailers, and containers used in North America called Universal Machine Language Equipment Register. Publications include the quarterly *Official Railway Equipment Register*, the biweekly *Rail News Update*, and the annual *Railroad Facts*. The AAR also publishes studies, statistical reports, and general information publications.

National Railway Labor Conference 1901 L Street, NW, Suite 500 Washington, D.C. 20036 Phone: (202) 862-7200 Fax: (202) 862-7230	Members: 150 Staff: 25 Budget: $4,100,000

The National Railway Labor Conference (NRLC), founded in 1963, serves as a management collective bargaining agency for the railroad industry. NRLC represents railroads as well as switching and terminal companies and compiles statistics on the industry.

Trucking

American Trucking Associations 2200 Mill Road Alexandria, VA 22314 Phone: (703) 838-1844 Fax: (703) 838-1992	Members: 4,100 Staff: 300 Budget: $45,000,000

The American Trucking Associations (ATA), founded in 1933, represents motor carriers, suppliers, State trucking associations, and national conferences of trucking companies. The ATA works to influence the decisions of Federal, State, and local governmental bodies to promote increased efficiency, productivity, and competitiveness in the trucking industries. ATA promotes highway and driver safety, supports highway research projects, and studies technical and regulatory problems of the trucking industry. ATA and its affiliated conferences provide extensive educational opportunities and products to assist trucking companies with safety, OSHA, and environmental regulation. In addition, the association provides members with a guide to Federal and State regulations and offers a comprehensive accounting service for carriers of all sizes. An information center containing numerous ATA and other publications is available to members and the public.

Association of Waste Hazardous Materials Transporters 2200 Mill Road Alexandria, VA 22314 Phone: (703) 838-1703 Fax: (703) 519-1866	Members: 75 Staff: 2

The Association of Waste Hazardous Materials Transporters represents carriers that transport PCBs, used oil, and hazardous and radioactive waste by truck and rail.

National Tank Truck Carriers 2200 Mill Road Alexandria, VA 22314 Phone: (703) 838-1960 Fax: (703) 864-5753	Members: 260 Staff: 7 Budget: $1,000,000

The National Tank Truck Carriers (NTTC) was founded in 1945 and represents common or contract tank truck carriers transporting liquid and dry bulk commodities, chemicals, food processing commodities, petroleum, and related products. NTTC promotes Federal standards of construction, design, operation, and use of tank trucks and equipment. NTTC sponsors schools,

conducts research, and produces periodicals, including the annual *Cargo Tank Hazardous Materials Regulations* and *Hazardous Commodities Handbook.*

Regional and Distribution Carriers Conference 2200 Mill Road, Suite 540 Alexandria, VA 22314 Phone: (703) 838-1990 Fax: (703) 836-6870	Members: 375 Staff: 5

The Regional and Distribution Carriers Conference (RDCC) consists of companies participating in trucking for hire, including local cartage and short haul. RDCC was founded in 1943 and represents motor haul carriers rendering distribution services beyond commercial zones. RDCC is affiliated with ATA and conducts an executive management seminar and exhibit. RDCC produces a monthly newsletter and several informational phamplets.

Interstate Truck Carriers Conference 2200 Mill Road, 3rd Floor Alexandria, VA 22314 Phone: (703) 838-1950 Fax: (703) 836-6610	Members: 800 Staff: 7 Budget: $800,000

The Interstate Truck Carriers Conference (ITCC) consists of contract carriers, irregular route common carriers, shippers, and others related to the motor carrier industry. ITCC was founded in 1983 and serves as an industry spokesperson for this part of the trucking industry. ITCC represents their members' interests before Congress, the Interstate Commerce Commission, and the courts. ITCC is affiliated with ATA and has a refrigerated carrier division as well as a political action committee. ITCC conducts a management development seminar at Notre Dame University and produces bulletins and newsletters.

Pipelines

Interstate Natural Gas Association of America 555 13th Street, NW, Suite 300 West Washington, DC 20004 Phone: (202) 626-3200 Fax: (202) 626-3249	Members: 35 Staff: 30

The Interstate Natural Gas Association of America (INGAA) represents transporters of natural gas. INGAA has established committees on issues regarding regulatory and government affairs, policy analysis, and the

environment. INGAA produces *Interstate Natural Gas Association of American - Washington Report*, a weekly newsletter that covers legislative and regulatory developments affecting the industry which is available to both members and non-members.

American Petroleum Institute 1220 L Street, NW Washington, DC 20005 Phone: (202) 682-8000 Fax: (202) 682-8030	Members: 300 Staff: 500

The American Petroleum Institute (API) works to ensure cooperation between industry and government on all matters of mutual concern. API conducts research, sets standards, provides information services, and maintains a large library. API was founded in 1919 and represents corporations in the petroleum and allied industries, including producers, refiners, marketers, and transporters of crude oil, lubricating oil, gasoline, and natural gas. API has committees on industry technical issues, health, environment and safety, and government affairs and produces many standards, periodicals, books, and manuals.

Association of Oil Pipe Lines 1101 Vermont Avenue, NW, Suite 604 Washington, DC 20005 Phone: (202) 408-7970 Fax: (202) 408-7983	Members: 80 Staff: 3

The Association of Oil Pipe Lines (AOPL), founded in 1947, consists of oil pipeline companies which are generally regulated carriers. AOPL compiles and presents statistical and other data related to the pipeline industry to Congress, government departments, agencies and commissions, trade associations, and the public. AOPL is affiliated with API and produces several publications, including *Oil Pipelines of the United States: Progress and Outlook*.

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XI. RESOURCE MATERIALS/BIBLIOGRAPHY

For further information on selected topics within the transportation industry sectors profiled in this document, a list of publications is provided below:

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Factbook: Energy, the Environment, and Natural Gas, AGA, 1983.

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U.S. Petroleum Strategies in the Decade of the Environment, Bob Williams, Pennwell Publishing Co., 1991.

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